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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Paul Robert Williams

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BRINKS HOFER GILSON & LIONE
P.O. BOX 10395
CHICAGO, IL 60610

EXAMINER

LAO, LUN S

ART UNIT

PAPER NUMBER

2615

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

09/658,538

Applicant(s)

WILLIAMS, PAUL ROBERT

Examiner

Corey P. Chau

Art Unit

2615

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 February 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 51-93 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 51-93 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date. _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 51-78, 82-88, and 93 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The specification of the instant application on page 10, lines 14-25, discloses "In one embodiment of the present invention, a FFT is run once every 4096 samples, and produces 4096 bins per FFT frame. The rate at which FFTs are run is 1/4096th of the sample rate, or about 85milliseconds. This effectively produces a sample rate of 11.7Hz for FFT processing. **The FFT transforms the time domain signal into a pair of arrays of FFT bins representing the real and imaginary components of the signal in the frequency domain. In step 504, half of the real and imaginary output arrays from the FFT are combined by summing the squares of each to produce an array of bins representing the magnitudes squared. The other half is a redundant mirror image.** Thus, in the present embodiments, 2048 magnitude-squared values are stored for later analysis. In step 506, all the "magnitude squared bins" are averaged into a Mean-Square value, or a mean value of the magnitude-square values", which is not

Art Unit: 2615

equivalent to "sequentially converting a buffered acoustic signal to a plurality of frames in a frequency domain, **each frame comprising an array of frequency magnitude bins**", in Claim 51. Therefore, The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The specification of the instant application on page 11, lines 13-20, discloses "Fig. 6 provides one example of a ballistics process, such as may be used by the ballistics process 414. In step 602, the new value of the frequency magnitude bin ("NEW_VALUE") is **compared to the previous value from previous FFT frames COLD_VALUE**". If the NEW_VALUE is less than the OLD_VALUE, then the OLD_VALUE is set to the NEW_VALUE in step 604. On the other hand, in step 606, if the NEW_VALUE is greater than the OLD_VALUE, the OLD_VALUE is set to the following first order filtering equation", which is not equivalent to "comparing a first value of a **first frequency magnitude bin that is included in a first frame with a second value of the first frequency magnitude bin that is included in a second frame**", in Claim 51. Therefore, The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The specification of the instant application on page 14, discloses "If the frequency bin magnitude is less than the ABSOLUTE_THRESHOLD, that frequency bin

Art Unit: 2615

is not considered to be a candidate for frequency feedback and the subroutine logic continues to step 5810. Step 810 sets a flag indicating that the frequency bin under consideration should not be considered to be a candidate frequency. Thus, the test performed in step 804 will only allow a frequency to be considered a candidate if the magnitude of its bin exceeds a certain volume. This prevents low-level signals from being further processed, even if the cause is feedback, 10 on the basis that feedback which is barely audible is probably not worth filtering. If at step 804 the frequency bin magnitude is greater than the ABSOLUTE_THRESHOLD, then the subroutine logic continues to step 806 where a comparison is made between the frequency bin magnitude and the 15RELATIVE_THRESHOLD (computed in step 802). If at step 806 the frequency bin magnitude is less than the RELATIVE_THRESHOLD, then that frequency bin is not considered to be a candidate for frequency feedback and the subroutine logic continues to step 810. Otherwise, execution proceeds to step 808, where a flag is set indicating that the frequency bin should be considered to be a candidate frequency. The test of step 806 only allows a frequency to be considered a candidate if the amplitude of its bin exceeds the average bin level by a given amount. This prevents feedback from being attenuated, which is already hidden by wide-band signals and is thus not doing any harm", which is not equivalent to "selecting **the first frequency magnitude bin** to be a candidate frequency", in Claim 51. Therefore, The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The specification of the instant application on page 14, discloses "If the frequency bin magnitude is less than the ABSOLUTE_THRESHOLD, that frequency bin is not considered to be a candidate for frequency feedback and the subroutine logic continues to step 5810. Step 810 sets a flag indicating that the frequency bin under consideration should not be considered to be a candidate frequency. Thus, the test performed in step 804 will only allow a frequency to be considered a candidate if the magnitude of its bin exceeds a certain volume. This prevents low-level signals from being further processed, even if the cause is feedback, 10 on the basis that feedback which is barely audible is probably not worth filtering. If at step 804 the frequency bin magnitude is greater than the ABSOLUTE_THRESHOLD, then the subroutine logic continues to step 806 where a comparison is made between the frequency bin magnitude and the 15RELATIVE_THRESHOLD (computed in step 802). If at step 806 the frequency bin magnitude is less than the RELATIVE_THRESHOLD, then that frequency bin is not considered to be a candidate for frequency feedback and the subroutine logic continues to step 810. Otherwise, execution proceeds to step 808, where a flag is set indicating that the frequency bin 20 should be considered to be a candidate frequency. The test of step 806 only allows a frequency to be considered a candidate if the amplitude of its bin exceeds the average bin level by a given amount. This prevents feedback from being attenuated, which is already hidden by wide-band signals and is thus not doing any harm", which is not equivalent to "selecting the first frequency magnitude bin comprises monitoring the first frequency magnitude bin for the first value to **iteratively increase to be greater than a threshold value**", in Claim 54.

Therefore, The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims 63, 78, 82, 85, and 93 are rejected for the same reasons stated above.

Claims 52-62, 64-77, and 83-88 are rejected for depending on a rejected Claim.

3. Claims 79-81 and 89-92 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. How to get values in order to "selecting a candidate frequency of an acoustic signal" such as the steps of: "sequentially converting a buffered acoustic signal to a plurality of frames in a frequency domain, each frame comprising an array of frequency magnitude bins; comparing a first value of a first frequency magnitude bin that is included in a first frame with a second value of the first frequency magnitude bin that is included in a second frame; in response to the second value being greater than the first value, increasing the first value as a function of the first value, the second value and a determined filter coefficient" critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976).
Claims 80-81 and 90-92 are rejected for depending on a rejected Claim.

Response to Arguments

4. Applicant's arguments with respect to claims 51-93 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Corey P. Chau whose telephone number is 571-272-7514. The examiner can normally be reached on Monday-Friday, 9:00am-6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on 571-272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

May 31, 2007
CPC


VIVIAN CHIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2900